

San Francisco, CA

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1. The Rockefeller Foundation defines resilience as the ability of a system, entity, community, or person to withstand shocks while still maintaining its essential functions and to recover quickly and effectively. How does this definition of resilience resonate with your city? What are the five most pressing resilience-building priorities for your city?

The City and County of San Francisco (City) shares the Rockefeller Foundation's vision for resilience, incorporating resiliency citywide through capital planning, neighborhood initiatives, and disaster preparedness. The resiliency of our citizens and government has shaped San Francisco, as time and again, our City has rebuilt after disasters, especially the earthquakes and fires of 1906 and 1989. San Franciscans have embraced our historical resilience, choosing the phoenix as the centerpiece of our City's Flag. It is this spirit that has carried us through ensuing challenges, as well as instilled in our residents a desire to invest resources so that when future times of stress occur we will once again bounce back and resume our place in the global economy.

In the last six years, new investments have occurred as a result of Mayor Edwin M. Lee's 2007 visit through the Clinton Global Initiative to New Orleans' neighborhoods after Hurricane Katrina. With the Harvard Kennedy School of Government's support, the Mayor set forth a wide range of initiatives that addresses our City's top five resilience building priorities:

1. Advance the City's ability to successfully govern and meet the needs of our residents, and stakeholders in our local economy, through all phases of a disaster;
2. Continue to invest in critical assets and systems whose ability to perform well during times of stress will translate into an expedited recovery;
3. Establish financial mechanisms that will drive participation in mitigation and recovery programs;
4. Empower our neighborhoods, especially those with vulnerable populations, with the capacity and the resources to advance their unique resilience goals, as well as contribute to the City's mission; and
5. Build strong and effective working relationships with both the public and private sectors to enable the City to receive the support necessary to recover to our original, if not better, condition.

2. Do you have a formal risk assessment for your city? What are the most significant hazards, shocks, and stresses that your city faces and how do they affect the ability of your city to function?

The City's Local Hazard Mitigation Plan (HMP) assessed risks posed by natural and human-caused hazards, quantified risks, and developed a mitigation strategy. The HMP identified the risks listed below by rating the severity of their potential effect to critical and non-critical facilities, as well as utility and transportation infrastructure.

Seismic hazards: according to the U.S. Geological Survey, there is a 63% chance that a major earthquake (Magnitude 6.7+) will strike the Bay Area by 2031. A seismic event could create hazards

including: ground shaking, liquefaction, landslides, and tsunamis. The vast majority of the city is located within potential severe shaking intensity hazard zones.

Climate-related hazards: are events with citywide impacts such as drought, wild fire, and severe heat as well as more localized hazards like coastal sea level rise, storm surge flooding, and wind. The City is especially concerned that global climate change will increase the severity and frequency of weather-related hazards and create shortages or price spikes in food, fuels, water, and other key resources.

Other hazards: include reservoir failure, urban conflagration and human caused hazards. The City has four reservoirs, whose failure would cause a sudden release of water that has the potential to cause flooding, resulting in human casualties, economic loss, and environmental damage.

Due to our wood-based housing stock, urban conflagration during an earthquake is possible. Studies show fire is a significant risk in San Francisco due to wind and weather patterns, the type and materials used in home and building construction, and population density.

Human caused hazards include the release of chemical, biological, radiological, nuclear and explosive materials, interruptions in the energy supply, and the many forms of terrorism. Effects of human caused hazards could be localized, city and region-wide, and could impact the City's critical facilities and infrastructure.

3. Many cities already have some activities that are directly relevant to building resilience. What specific current or recent project(s), urban plan(s) or policy(ies) has made the most significant positive contribution to the resilience of your city? Were there innovations that you can describe?

ResilientSF: an effort to develop and implement mitigation and preparedness efforts for disaster recovery in order to create a unified framework of resilience including financial recovery, continuity of operations, post event housing, lifeline resilience, and launching a multisector community engagement effort.

ONESF Ten-Year Capital Plan: the City biennially develops and adopts a ten-year capital expenditure plan for city owned facilities and infrastructure that prioritizes earthquake safety and improving resiliency. As recommended by the Capital Plan, voters approved \$1.9 billion of bonds to address seismic safety and related infrastructure improvements.

Earthquake Safety Implementation Program (ESIP) & Water and Sewer System Improvement Projects (WSSIP): a 30-year, multibillion dollar, plan to become more resilient, safer, and sustainable by focusing on mitigating the risk faced by privately owned buildings and critical infrastructure during earthquakes. The City began this effort with the mandatory soft story retrofit program, and upgrades to our water and sewer system.

Empowered Communities Program: a leadership development initiative focused on increasing the capacity of local stakeholders to steward the networks (power, water, telecom) and assets (parks, clinics, banks) in their community.

Neighborhood Emergency Response Teams: a free training program for individuals, neighborhood groups and community-based organizations to learn personal preparedness and prevention.

City Climate Action Plan: estimates the City's baseline greenhouse gas emissions and reduction target, describes emissions reduction actions in targeted sectors, and presents next steps to implement the Plan.

Public Engagement & Information: the City has multiple systems for communicating with the public regarding disaster preparedness, emergency alerts and disaster coordination including: an outdoor public warning system, SFHeroes, SF72, AlertSF, CCSF Alert and 311 Customer Service Center.

4. How do the hazards, shocks and stresses that you've articulated impact your city's poor and vulnerable residents? How do you define poverty and vulnerability within the context of your city?

Vulnerable populations live throughout San Francisco and are at risk of a wide variety of shocks and stresses. The City has approximately 826,000 residents, including a high number of immigrants (over 46%) for whom English is a second language. To work with these, and other, vulnerable residents, such as public housing and low income individuals, the Office of Civic Engagement and Immigrant Affairs conducts ongoing community outreach and education, as well as language services during crisis, emergency and public safety situations.

The City's densely populated Chinatown houses thousands of senior citizens in buildings vulnerable to collapse in an earthquake. The residents of the Bayview neighborhood are vulnerable to sea level rise, earthquakes and heat waves. The City has worked with these communities, in concert with the nonprofit and private sector, to develop and implement customized preparedness, and in some cases response plans, to ensure that during times of stress these vulnerable residents have an equal opportunity to both survive and recover from a disaster.

The Unreinforced Masonry Building and Mandatory Soft Story retrofit programs prioritized buildings that house senior living facilities, childcare facilities, and other community-serving functions. These types of initiatives were paired with innovative financing mechanisms, like Special Tax Districts, to ensure that people across all income brackets can benefit from enhanced resiliency.

San Francisco's disabled community is also vulnerable. Since Hurricane Katrina, the Mayor's Office on Disability has developed an integrated model of disaster preparedness. This model places a disability services coordinator within the Emergency Management construct to assess residents' needs and draw resources from the City's Human Services Agency, and its community partners, in times of disaster.

5. Describe how you will bring multiple stakeholders, including the private sector and other levels of government (e.g., state and or national) together in developing and executing a plan to build resilience. Please give examples of key stakeholders. Which stakeholders do you think are the most relevant and most critical to success?

San Francisco recognizes the crucial need to collaborate with a wide variety of stakeholders to strengthen our resiliency. City agencies work with key stakeholders in the public and private sectors to explore ways to strengthen the City's lifelines. Examples include:

San Francisco Lifelines Council: started in 2009, the Council is a public-private partnership that meets on an ongoing basis with the goal of increasing interoperability pre-disaster so that, during times of stress, basic infrastructure interruptions will be minimized. Participating agencies include communications, power, liquid fuel, natural gas, multi-modal transportation, water, and wastewater. Key stakeholders on this program are AT&T, PG&E, SFPUC, Transit Agencies, SF Planning and

Urban Research Association. A Lifelines Interdependency Study is nearing completion representing 13 public and private lifelines operators.

UNISDR Private Sector Working Group: San Francisco is one of three cities to participate in the United Nations International Disaster Reduction Initiative's urban resilience private sector working group. The City Administrator hosted a daylong workshop with private sector stakeholders, such as AECOM and IBM Innovations, that allowed public and private sector leaders to work on some of the toughest resilience challenges facing cities.

The City also works regularly with the private sector on emergency preparedness, continuity of operations, and response coordination. The San Francisco Office of Emergency Services administers and develops tabletop and functional exercises, as well as, activates the Emergency Operations Center to coordinate local, regional, state and nation response and recovery resources. These resources include: private and public sector partners, Consulate Corps, and non- and not-for-profit entities.

6. What specific technical support would you seek for the development of a resilience plan (such as financing mechanisms, technology and data analytics, land-use planning, infrastructure, and community/social resilience capacity building)? What specific technical support would you seek for implementing a resilience plan? Are there solutions or solution providers/ companies with which your city has already worked with or would like to work?

San Francisco has already created partnerships with public, private and academic institutions, including Harvard, URS, IDEO and AECOM. However, the biggest challenge the City has is the capacity to fully leverage these resources on a sustained basis. San Francisco needs to build upon these relationships annually to identify the gaps that still exist and to complete recommendations resulting from the relationships.

San Francisco's Resilience Plan must continually evolve to remain effective and relevant. To develop, and maintain, our Resilience Plan, the City would seek technical support to create an enterprise risk management approach to resilience. The City seeks technical support to:

- * Explore how technology can be used to advance resilience.
- * Develop tools that can be secured now for post disaster needs assessments;
- * Create a centralized GIS mapping system to integrate all of the City's assets;
- * Develop assessments for debris removal and assistance with evacuations;
- * Streamline building inspection and planning processes to accelerate recovery and get San Franciscans back into their homes and businesses

The City and County of San Francisco, through the Controller's Office, has taken the lead in identifying and minimizing costs related to disasters. Specifically, the Controller has identified changes to the Stafford Act and FEMA reimbursable costs, researched the City's ability to access emergency funds in the event of a disaster, and work with departments to fast track cost recovery efforts. Also, through the City's Risk Management Office, the City is seeking third party insurance to

protect the City's assets. The City would seek to further these efforts through our membership in the 100RC Network.

7. What is the desired impact you want your resilience plan to have in terms of success? How might the plan impact various communities, especially poor or vulnerable residents?

San Francisco's Resilience Plan's highest priority will be coordinating resiliency efforts, not only within the City government, but externally with our residents, and public and private partners. Key to implementing this goal is building resiliency in infrastructure (critical facilities, utilities and transportation) and in communities.

We know that in the aftermath of an event neighborhoods will need to be self-sufficient. After an event, it is the City's responsibility to continue operations at the highest possible level so that our residents, especially the most vulnerable, will experience minimal disruption. Local businesses and nonprofits must also meet the same performance standard since they equally contribute to residents' ability to meet their day-to-day needs. To this end, the Resilience Plan must draw from existing initiatives, such as ESIP, SF Lifelines Council, ONESF, and our Human Service Agency initiatives, which are crucial to supporting the City's vulnerable populations.

The City's Resilience Plan will also ensure that San Francisco's community programs, such as SF Share, SF72 and the Empowered Communities Program will expand throughout the city. Implementing these programs will connect residents to local government, create strong and effective leadership and develop culturally competent mitigation and response plans. Effective implementation of these programs will lessen the amount of stress on residents during a period of stress, provide an opportunity for communities to connect, and foster community resilience while the government works to restore critical lifeline services to those who need it the most.

8. How do you envision the role of a Chief Resilience Officer? Beyond salary support, what structure would be established to enable the CRO to succeed in building your city's resilience? We recommend that the CRO would have a direct reporting line to the mayor or a senior official. If you already have someone in a similar function/role, what duties and powers is he or she currently vested with?

The Chief Resiliency Officer (CRO) will lead an interdepartmental group and work collaboratively with key external stakeholders to develop the City's Resilience Plan. The Resilience Plan will contain actionable recommendations that the City can implement to further our resiliency efforts. After the Resilience Plan is crafted, the role of the CRO will shift to implementation and updating the Plan.

The CRO position will fill an existing gap in the City's resiliency efforts. Currently, multiple departments create or implement policies related to resiliency. For example, the Public Utilities Commission oversees the City's water, power and sewer systems; the Department of Public Works implements civic building projects; the Neighborhood Empower Network works on building resiliency in neighborhoods; the Office of Emergency Services handles 9-1-1 calls and plans for disaster preparedness and recovery; the Department of Building Inspection develops standards and implements our soft-story retrofit program. The CRO will bring together these individual departments, and community stakeholders, to create and implement the Resilience Plan.

To ensure the CRO's success, he or she will be placed in the City Administrator's Office. The City Administrator is directly under the Mayor in the City's organization chart. The office oversees departments that directly relate to resiliency including: lifelines, capital planning, real estate,

purchasing, risk management, community and structural resilience. The Office also has existing relationships with communities throughout San Francisco and a robust language access policy to ensure information is distributed to all residents. Additionally, the City Administrator's Office has the necessary political capital and operational capacity to allow the CRO to advance the City's resiliency goals. To ensure support, the CRO will report directly to the City Administrator and the Mayor's senior advisors.

9. One key element to 100RC is the creation of the 100 Resilient Cities Network to facilitate sharing of best practices and lessons learned as well as become a source of knowledge on urban resilience building. What are the things your city would like to gain from the network and what are three things your city would contribute to the network?

San Francisco has an immense appetite for sharing best practices and lessons learned. Mayor Lee has led delegations to both New Orleans, Louisiana and Christchurch, New Zealand to see first-hand the devastation caused by natural disasters and to identify ways San Francisco could support their respective rebuild efforts. Delegations and academics have also come to San Francisco to learn about our efforts to recover from the 1989 Loma Prieta earthquake and share their ideas.

If selected to join the 100RC Network, San Francisco will continue to learn from municipalities, regardless of size, and offer to share data, lessons learned, and planning efforts in order to contribute to its fellow cities' success. Specifically the City is eager to share:

SF72: an analog and digital integration that introduces and inspires residents to take action in building their own resilience. Developed with residents, private, non-profit and public sector, the program provides information on how to be prepared post emergency. The key to this program is connecting people and capabilities within a community.

San Francisco Lifelines Council: a multi-sector collaboration around lifeline infrastructure.

ONESF: the City's 10-year capital plan has dedicated billions of dollars in bond money to strengthen the City's water and sewer systems, critical buildings (i.e firehouses, police stations, hospitals, health clinics, parks, libraries), roads and bridges.

Empowered Communities Program: a leadership development initiative focused on increasing the capacity of local stakeholders to steward the lifelines and assets in their community so that during times of stress they can partner on their recovery.

AdaptSF: a interdepartmental working group focused on the City's most imminent adaptation concerns: sea level rise, flooding from storm surges and extreme rain events, an increased likelihood of extreme heat, and decreased fog that supports the region's iconic redwoods and local ecosystems.

10. Are you currently a participant in or have you participated in other networks? Which ones?

The City participates in both domestic and international networks to strengthen resiliency, including: Urban Area Security Initiative, United Nations International Strategy for Disaster Reduction (ISDR), C40, Citizen Corps Council (CCC), Green Cities California (GCC), Urban Sustainability Directors Network (USDN) and Bay Area Climate Collaborative.

11. What about your city in particular makes you a good candidate for 100 RC? What unique perspective, knowledge, or capability do you bring? What essential problem must be addressed whose solution can also be replicable for other cities?

The Bay Area is home to nearly 7 million residents, is a major component of the national economy, and is a vital link for air, sea, and ground transportation. The Bay Area is also highly vulnerable to both natural hazards and human-caused disasters, such as earthquakes, fires, industrial accidents, and acts of terrorism. The effects of a significant disaster in the Bay Area would extend throughout the State of California and across the nation. As the center of the region, it is crucial that San Francisco maintains a robust resilience program.

The City remains vigilant in our pursuit of resilience. San Francisco is a worldwide tourist destination, a global financial center, houses 30 of the world's largest financial institutions, and is a major technology hub for biotechnology and internet commerce. We are also home to hundreds of thousands of immigrants, seniors and people living with disabilities whose lives and livelihoods could be in jeopardy if a major event should strike. Our goal is to mitigate the impact of the inevitable, especially on our most vulnerable residents. In this regard, San Francisco is an idea incubator for the global community to learn from. For example, our innovative use of financing and building codes has made our building stock safer, and our use of social media to educate and motivate the public has influenced residents to take important steps in advance their personal resilience. The most important challenge we face is the need to constantly inform, educate and inspire our diverse population of residents to be vigilant in this work. Making smart investments in our infrastructure will pay off seven fold when the City is tested again.

San Francisco collaborates with a wide range of networks to enhance our city's resiliency capabilities. Our city looks forward to continuing to expand our network, to share our initiatives, and to gain new perspectives.

12. Include a link to a map of your city in which you highlight and annotate areas and features of particular importance to your application responses

<http://sfgov.maps.arcgis.com/apps/OnePane/basicviewer/index.html?webmap=...>